Some Observations on Wounds Inflicted by the Bullets of the Martini-Henry Rifle.

Mr. T. LONGMORE, Surgeon-General of the British Army, in some observations on this subject at the London Congress, said that in the summer of 1879, Dr. Kirker, R. N., brought to his notice some observations he had made experimentally on certain differences in the characters of wounds inflicted by spherical bullets, and those by conoidal bullets. These differences were quite reconcilable with the conditions of the experiments instituted, especially as regards the nature of the objects fired at, the relative dimensions and weights of the projectiles employed, and the distances at which the objects were hit by them.

One of the observations made by Dr. Kirker was, that, though bones penetrated by the conoidal bullets were extensively fissured, the periosteal investment of the fragments was not much disturbed; and Dr. Kirker was led to surmise that, in some instances, the cures without suppuration of fractures of bones caused by conoidal bullets, which had been attributed to special modes of treatment, might have been chiefly due to the fragments having been maintained in situ in the manner just mentioned.

That fractures of long bones by conoidal bullets are usually accompanied by extensive fissures, and that some of the fissured fragments are held in situ by the periosteum, are acknowledged facts; but that the maintenance of the fragments by their periosteal covering should occur so largely as to enable the wound to become healed without suppuration was new to Mr. Longmore.

It occurred to Mr. Longmore that it might be useful to carry out a few experiments with the hardened bullet of the Martini-Henry rifle in present use, for the purpose of comparing its effects with those of the bullet used by Dr. Kirker. as described by him, and also with the effects previously observed by himself of the Enfield rifle bullet. It was particularly as to the amount of local comminution of the bone, and the extent to which the fissured fragments were kept in situ by the periosteum, that he thought observations might be useful.

The results of these trials Mr. Longmore accordingly made were briefly as follows:—

1. The Martini-Henry bullet causes considerably more laceration and contusion of the soft tissues, with all comminution and displacement of bone at the site of impact, than were observed in the experiments described by Dr. Kirker.

2. The area of comminution is not so extensive, and generally the fragments are not so widely scattered, with the Martini-Henry bullet, as occurred in corresponding experiments made by Mr. Longmore with the Enfield rifle bullet, .55 inch in diameter, of soft lead.

3. A larger proportion of displaced fragments at the part of the bone struck by the Martini-Henry projectile, retain their periosteal connection than when the Enfield rifle bullet was used; while long fragments, above and below the site of impact, though detached by fissuring from the adjoining bone surfaces, are maintained in close apposition by the periosteal investment.

4. It was noticed, in one experiment, that though fissures extended completely through the apophysis of the bone, the synovial membrane, covering the joint surface, remained intact. The fissures extended to the joint, but the joint was not opened.

Conclusions: The state of the bone wounded by the hardened Martini-Henry projectile appears to offer more opportunities of repair than if the fracture had been caused by an Enfield rifle soft leaden bullet.

When the grave importance of the long fissured fragments being retained in juxtaposition, and in their normal relation to the shaft of the fractured bone is remembered, and the further importance of the periosteum covering them being kept intact; these experiments point very strongly to the urgent necessity of *immobilizing* such fractures from the onset.

The special importance of immobilizing gunshot fractures, which are supposed to be accompanied with fissures extending into a neighbouring joint, is also rendered very manifest: for in any case where the extremity of the bone is split, but the synovial capsule of the articulation happens to be still complete, it is obvious that a small amount of rough movement may cause the synovial membrane to be torn along the line of fissure in the bone, and a communication to be established between the seat of fracture and the interior of the joint. The gravity of the injury would be very largely increased should this happen.

Removal of the Entire Tongue with Scissors through the Mouth.

Mr. WALTER WHITEHEAD, Surgeon to the Manchester Royal Infirmary, on November 3, 1877, removed the whole of the tongue through the mouth with scissors (*vide Brit. Med. Journ.*, December 8, 1877, p. 303) which is believed to be the first instance of the entire tongue having been removed for disease through the mouth by simple excision. More than thirty tongues have since been removed by the same plan. In a paper presented to the London Congress Mr. Whitehead made a study of these cases. The operation is conducted in six stages after the following simple manner: 1. The mouth is opened to the full extent with a suitable gag; and the duty of attending to this is entrusted to one of the two assistants required. 2. The tongue is drawn out of the mouth by a double ligature passed through its substance an inch from the tip. 3. The operator commences by dividing all the attachments of the tongue to the jaw and to the pillars of the fauces. 4. The muscles attached to the base of the tongue are then cut across by a series of successive short snips of the scissors until the entire tongue is separated on the plane of the inferior border of the lower jaw, and as far back as the safety of the epiglottis will permit. 5. The lingual or any other arteries requiring torsion are twisted as divided. 6. A single loop of silk is passed by a long needle through the remains of the glosso-epiglottidean fold of mucous membrane, as a means of drawing forwards the floor of the mouth should secondary hemorrhage take place.

The patient is fed for the first three days by nutritive enemata; satisfying thirst by occasionally washing out the mouth with a weak iced solution of permanganate of potash. The difficulties and dangers of the operation are few. Hemorrhage is easily controllable. I have twice removed the entire tongue without having to secure a single vessel, and more than once have only had to twist one lingual artery.

A table of twenty-eight cases, with one death the immediate result of the operation (an old man æt. 69) accompanies the paper. Two other deaths occurred in consequence of the operation, but from remote causes.

Taking the most unfavourable estimate, the deaths in the twenty-eight cases do not amount to 11 per cent., and, when contrasted with the 30 to 60 per cent. of deaths resulting from removal of the tongue by any other operation, I venture to affirm that substantial evidence has been submitted in favour of the removal of the tongue with scissors.

Indications for Extra- or Intra-Laryngeal Treatment of Growths in the Larynx.

Curious difference of opinion between surgeons and laryngologists exists on this question, and there is considerable difficulty in giving, at the present time, final and accurately determined indications for certain doubtful categories.